ScienceDaily®
Your source for the latest research news

Cardiac Arrest Resuscitation: Passive Oxygen Flow Better Than Assisted Ventilation

Date: August 15, 2009

Source: University of Arizona Health Sciences Center

Summary: Arizona researchers compared the survival rates in out-of-hospital cardiac arrest patients treated with positive-pressure ventilation (bag-valve mask) vs. passive oxygen flow. Survival was higher (38.2 percent) with passive oxygen flow than with assisted ventilation (25.8 percent). This study reinforces the notion that survival of out-of-hospital cardiac arrest might have more to do with circulating the blood through uninterrupted chest compressions than with ventilation.

FULL STORY

Arizona researchers have added another piece to the mounting body of evidence that suggests during resuscitation efforts to treat patients in cardiac arrest, "passive ventilation" significantly increases survival rates, compared to the widely practiced "assisted ventilation."

The study, published in an online edition of *Annals of Emergency Medicine*, compared the numbers of patients who had suffered a cardiac arrest outside a hospital setting and were resuscitated in the field by Emergency Medical Services personnel. Rescuers used either bag-valve-mask ventilation, which forces air into the patient's lungs, or facemasks with a continuous flow of oxygen, which work in a similar fashion to those carried on airplanes in case the cabin pressure drops.

Among the 1,019 adult out-of-hospital cardiac arrest patients in the analysis, 459 received passive ventilation and 560 received bag-valve-mask ventilation. Neurologically normal survival after witnessed cardiac arrest with a shockable heart rhythm was higher for the passive oxygen flow method (38.2 percent) than bag-valve-mask ventilation (25.8 percent).

"These results are strikingly similar to earlier observations from Wisconsin, where survival rates went up from 15 percent to 38 percent after paramedics abandoned the official guidelines for the modified protocol that we developed," says Gordon A. Ewy, MD, a co-author of the study and director of the Sarver Heart Center at The University of Arizona College of Medicine. The Sarver Heart Center's Resuscitation Research Group developed a modified protocol for treating out-of-hospital cardiac arrest called Cardiocerebral Resuscitation, as opposed to Cardiopulmonary Resuscitation, which should be reserved for respiratory arrest (such as near-drowning or drug overdose).

Under the new concept, first tested in Wisconsin, EMS personnel no longer intubated the patient for ventilation. Instead, they applied a facemask delivering a continuous, low-pressure flow of oxygen.

"Our findings provide compelling evidence that positive pressure ventilation is not optimal in the initial

management of out-of-hospital cardiac arrest," says lead author Bentley Bobrow, MD, emergency physician at Maricopa Medical Center in Phoenix and associate professor of emergency medicine at the UA College of Medicine. "The work from our EMS providers in Arizona further questions the longstanding dogma of tracheal intubation and ventilation for cardiac arrest.

"We are most pleased that while we are helping to advance the science of resuscitation, we are saving more victims of cardiac arrest in Arizona than ever before," adds Dr. Bobrow, who also is the medical director for the Arizona Department of Health Services Bureau of Emergency Medical Services.

"This study reinforces our belief that survival of out-of-hospital cardiac arrest has more to do with circulating the blood through quality and uninterrupted chest compressions than with ventilation," Dr. Ewy adds.

MAKE A DIFFERENCE: SPONSORED OPPORTUNITY

Story Source:

Materials provided by **University of Arizona Health Sciences Center**. *Note: Content may be edited for style and length.*

Cite This Page:

MLA APA Chicago

University of Arizona Health Sciences Center. "Cardiac Arrest Resuscitation: Passive Oxygen Flow Better Than Assisted Ventilation." ScienceDaily. ScienceDaily, 15 August 2009. <www.sciencedaily.com/releases/2009/08/090812092132.htm>.